WHAT IS CLAIMED IS:

1. A lateral coordinate calibration method for a surface shape measuring apparatus which measures a shape of a surface to be measured by causing a measurement light reflected from the surface to be measured and a reference light to interfere with each other and detecting with a detector a phase difference through the interference, the method comprising the steps of:

providing a reflecting optical element formed with a specific pattern and designed to generate a reflection wavefront substantially the same as said measurement light, and generating an interference image of said reflection wavefront from said reflecting optical element and said reference light on a detection surface of said detector;

detecting lateral coordinate information of an image of said specific pattern on said detection surface which is formed in connection with the generation of said interference image;

calculating a relationship between lateral coordinate information of said specific pattern on said reflecting optical element and the lateral coordinate information of an image of said specific pattern on said detection surface.

2. A lateral coordinate calibration method for

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a surface shape measuring apparatus according to claim 1, wherein said reference light is a reflection light from a reference surface.

3. A lateral coordinate calibrating method for a surface shape measuring apparatus according to claim 1 or 2, wherein said reflecting optical element comprises a reflection type diffractive optical element.

4. A lateral coordinate calibrating method for a surface shape measuring apparatus according to claim 3, wherein said specific pattern comprises a pattern composed of presence and absence of a diffracting pattern formed on said reflection type diffractive optical element.

5. A lateral coordinate calibrating method for a surface shape measuring apparatus according to claim 1, wherein said specific pattern comprises a pattern composed of a plurality of apertures.

6. A lateral coordinate calibrating method for a surface shape measuring apparatus according to claim 1, wherein said specific pattern comprises a pattern composed of a plurality of light shielding portions.

7. A lateral coordinate calibrating method for a surface shape measuring apparatus according to claim 1, wherein said specific pattern comprises a pattern composed of a plurality of annular apertures and annular light shielding portions that are alternately and concentrically provided adjacent to each other.

8. An optical member having been measured using a lateral coordinate calibrating method for a surface shape measuring apparatus according to claim 1 or 2.

9. A surface shape measuring apparatus which measures a shape of a surface to be measured by causing a measurement light reflected from the surface to be measured and a reference light to interfere with each other and detecting with a detector a phase difference through the interference, comprising:

reflecting optical element formed with specific pattern and designed to generate a reflection wavefront substantially the same as said measurement light so as to generate an interference image;

a calculator which calculates a relationship between lateral coordinate information of said specific pattern on said reflecting optical element and the lateral coordinate information of an image of

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said specific pattern on said detection surface.

10. A surface shape measuring apparatus according to claim 9 further comprising a memory portion which stores said relationship.

11. A surface shape measuring apparatus according to claim 9 or 10, wherein said reference light is a reflection light from a reference surface.

12. A surface shape measuring apparatus which measures a shape of a surface to be measured by causing a measurement light reflected from the surface to be measured and a reference light reflected from a reference surface to interfere with each other and detects a phase difference through the interference, the apparatus comprising a stop disposed at a position conjugate with said surface to be measured.

13. A surface shape measuring apparatus according to claim 12, wherein said stop is provided with an adjusting member.

14. A surface shape measuring apparatus according to claim 13, wherein said adjusting member comprises a moving unit which moves said stop to the

position conjugate with said surface to be measured.

15. A surface shape measuring apparatus according to claim 13, wherein said adjusting member comprises a plurality of reflecting mirror portions and a mirror moving portion which moves the reflecting mirror portions in such a way that said stop and said surface to be measure are conjugate with each other.

16. An optical member having been measured using the surface shape measuring apparatus according to any one of claims 12 to 15.

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